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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/914,482 | 08/28/2001 | Masahiro Yatake | U013615-2 | 8058 |

140 7590 03/12/2003

LADAS & PARRY
26 WEST 61ST STREET
NEW YORK, NY 10023

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| EXAMINER |
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FAISON, VERONICA F

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| ART UNIT | PAPER NUMBER |
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1755

DATE MAILED: 03/12/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/914,482

Applicant(s)

YATAKE, MASAHIRO

Examiner

Veronica F. Faison

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,5. 6) ☐ Other: .

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: On page 6, line 25, Applicant has stated the m_1 , m_2 , m_3 , n_1 , n_2 , n_3 each are independently 0 or a natural number of not less than 1, wherein $m_1 + m_2 + m_3 + n_1 + n_2 + n_3$ is in the range of 0.5 to 10. It is unclear to the how Applicant has a lower limit of 0.5 where no number is between 0 and 1 that can be present in the range.

Appropriate correction is required.

Claim Objections

Claim 1 is objected to because of the following informalities: In claim 1, it is the position of the Examiner that the symbol for parentheses (i.e. []) should be deleted to avoid confusion. Appropriate correction is required.

Claim 20 and 21 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 20 is directed to an ink jet recording method, which does not further limit the ink composition of claim 1. Claim 21 is directed to a record produced, which does not further limit the ink composition.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claim 1 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, Applicant claims that m_1 , m_2 , m_3 , n_1 , n_2 , n_3 each are independently 0 or a natural number of not less than 1, wherein $m_1 + m_2 + m_3 + n_1 + n_2 + n_3$ is in the range of 0.5 to 10. It is unclear to the how Applicant has a lower limit of 0.5 where no number is between 0 and 1 that can be present in the range. Please clarify.

In claim 14, line 4, Applicant claims a weight ratio of the 1,2-alkylene glycol to the di(tri)ethylene glycol monobutyl ether is 1:0 to 10. It is unclear to the Examiner what exactly is the upper limit of this ratio. Please clarify.

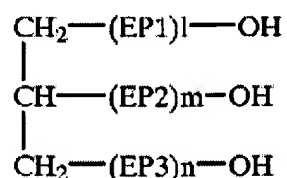
Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 5-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi (US Patent 6,432,186 B1).

Taniguchi teaches an ink composition comprising a least a reactive dye, a surfactant, water and at least one compound represent by formula (I):



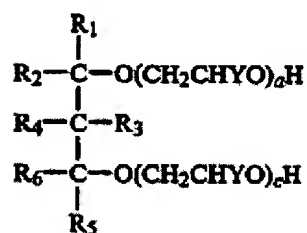
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wherein EP1, EP2, and EP3 each independently represent an ethyleneoxy or propyleneoxy group and $l+m+n$ is a natural number of not less than 1 (abstract and col. 1 line 51-col. 2 line 10). The reactive dye may be present in the ink composition in the amount of 0.1 to 15 percent by weight (col. 3 lines 31-34). The reference further teaches that the compound represented by formula (I) may be added alone or as a mixture of two or more. In formula (I), EP1, EP2, and EP3 each independently represent an ethyleneoxy or propyleneoxy group. Therefore both the ethyleneoxy and propyleneoxy group may exist in the same molecule. Alternatively, only any one of the ethyleneoxy and the propyleneoxy group may exist in one molecule (col. 4 lines 19-31). The reference further teaches that the main solvent of the ink composition is water, however the ink composition may comprise an organic solvent. The organic solvent includes 1,2-pentanediol, 1,2-hexanediol, 1,2-octanediol and glycerin which may be used alone or as a mixture of two or more (col. 7 lines 15-53). The ink composition may further comprise an alkylene glycol alkyl ethers such as diethylene glycol monobutyl ether (col. 7 line 66-col. 8 line 18). The surface tension of the ink composition is disclosed as being preferably 40 to 25 mN/m (col. 10 lines 11-14). Taniguchi fails to specifically exemplify the use of glycerin as claimed by applicant. Therefore, it would have been obvious to one of ordinary skill in the art to use of glycerin as claimed by applicant as Taniguchi also discloses the use of glycerin but shows no example incorporating them.

Claims 1, 3 and 15-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hickman et al in view of Taniguchi.

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Hickman et al teach an aqueous ink composition comprising an aqueous carrier medium, a colorant, and at least one anti-curl agent. The colorant may be a pigment dispersion or a dye. The anti-curl agent may be represented by a polyoxyalkylene derivatives having the following formula:



wherein R_1 , R_2 , R_4 , R_5 and R_6 are independently H; C_nH_{2n+1} , where $n=1$ to 4; or $C_nH_{2n}O(CH_2CHYO)_bH$ where $n=1$ to 6 and $b=0$ to 25; R_3 may be H; C_nH_{2n+1} , where $n=1$ to 4; or $C_nH_{2n}O(CH_2CHYO)_bH$ where $n=1$ to 6 and $b=0$ to 25; Y may be H or CH_3 (col. 2 lines 14-44). The reference further teaches that the ink composition may be used in an ink set comprising cyan, magenta and yellow dye-based ink compositions (col. 10 lines 27-34). The examples of the reference teach that a mixture of solvents which include diethylene glycol monobutyl ether may be used in the ink composition. Hickman et al fails to teach glycerin in the ink composition.

Taniguchi is describe above; the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have replaced diethylene glycol monobutyl ether with glycerin because the substitution of art recognized equivalents as shown by Taniguchi would have been within the level of ordinary skill in the art.

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Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hickman et al in view of Taniguchi as applied to claims 1 and 3 above, and further in view of Rehman.

Hickman et al and Taniguchi are described above, but fail to teach a surface treated pigment.

Rehman teaches pigments can be combined with a suitable dispersant to be self-dispersing (col. 2 lines 50-52). The reference further teaches self-dispersing pigments are modified by attaching of one or more organic groups to the pigment (col. 3 lines 5-35). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have replaced pigment and dispersant with self-dispersing pigment because the substitution of art recognized equivalents as shown by Rehman would have been within the level of ordinary skill in the art.

Conclusion

The remaining references listed on forms 892 and 1449 have been reviewed by the Examiner and are considered to be cumulative to or less material than the prior art references relied upon in the above rejections.

Japanese references 07-157698 and 09-328644 have been considered to the extent in which they are present in the specification.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Veronica F. Faison whose telephone number is 703-

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305-3918. The examiner can normally be reached on Monday-Thursday and alternate Fridays 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell can be reached on 703-308-3823. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Veronica F. Fajson
March 7, 2003



Mark L. Bell
Supervisory Patent Examiner
Technology Center 1700